

What Is Claimed Is:

1. A method of fabricating a liquid crystal display panel having first and second substrates, the method comprising the steps of:

forming a first electrode on the first substrate;

forming a second electrode on the second substrate;

assembling the first and second substrates;

forming a bistable twist nematic liquid crystal layer between the first and second substrates, wherein the bistable twist nematic liquid crystal layer having a monomer;

aligning the bistable twist nematic liquid crystal layer by applying electric fields; and

forming polymer networks by exposing the bistable twist nematic liquid crystal layer to light.

2. The method of claim 1, wherein the light includes ultraviolet rays.

3. The method of claim 1, wherein the electric fields includes a voltage in the range of 20 to 30 V.

4. The method of claim 1, wherein the first and second electrodes are selected from a group consisting of indium tin oxide (ITO) and indium zinc oxide (IZO).

5. The method of claim 1, wherein the bistable twist nematic liquid crystal contains a chiral dopant.

6. A method of fabricating a liquid crystal display panel having first and second substrates, the method comprising the steps of:

injecting a bistable liquid crystal mixed with a chiral dopant and a monomer between the first and second substrates, wherein the bistable liquid crystal is aligned with a twist angle of 180 degrees;

applying a reset voltage to the bistable liquid crystal; and

polymerizing the monomer in the bistable liquid crystal, thereby forming a plurality of polymer networks.

7. The method of claim 6, wherein the bistable liquid crystal in the step of polymerizing the monomer maintains an homeotropic alignment.

8. The method of claim 6, wherein the step of polymerizing the monomer includes exposing UV light to the bistable liquid crystal.

9. The method of claim 6, wherein the steps of applying a reset voltage and polymerizing the monomer are simultaneously performed.

10. The method of claim 6, wherein the reset voltage is in the range of 20 to 30 V.

11. A liquid crystal display panel, comprising:  
first and second substrates; and

a liquid crystal layer between the first and second substrates, wherein the liquid crystal layer has a photo-polymerized monomer and is aligned perpendicular to the substrates.

12. The liquid crystal display panel of claim 11, further comprising first and second electrodes on the first and second substrates, respectively.

13. The liquid crystal display panel of claim 12, wherein the first and second electrodes are selected from a group consisting of indium tin oxide (ITO) and indium zinc oxide (IZO).

14. The liquid crystal display panel of claim 11, wherein the liquid crystal layer includes a bistable nematic liquid crystal layer.

15. The liquid crystal display panel of claim 11, wherein the liquid crystal layer contains a chiral dopant.

16. The liquid crystal display panel of claim 11, wherein the liquid crystal layer contains at least one polymer network.